

A NEW ARIZONA PURSHIA (ROSACEAE)

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Recent critical morphologic analysis of the extreme variation included within the central Arizona species, Purshia subintegra (Kearney) Henrickson (Henrickson, 1986) and similar variation observed on lectotype and isolectotype preparations of the basionym (Schaack, 1987) indicate that P. subintegra was based on material of hybrid origin. Morphology and phenology displayed in central Arizona hybrid residuum suggests that this nothospecies was formed via past hybridization between Purshia stansburiana (Torr.) Henrickson and an unnamed species previously included within P. subintegra. This unnamed species, now confined to calcareous substrate in Graham County, Arizona, is here described. Data to support the hybrid origin of P. subintegra will be presented elsewhere.

PURSHIA PINKAVAE Schaack, sp. nov.

Species haec et P. ericifolia (Torr.) Henrickson folia linearia vel angustissime spatulata integra valde revoluta speciebus aliis Purshiae differunt. E P. ericifolia brachyblastis cylindricalibus lignosis, foliis dispositis alternatim helicisque cum apicibus rotundatis minute mucronatis, hypanthiis normaliter eglandulosis et tempore fructificante infundibuliformibus praecoce deciduis, lobis calycis non-apiculatis pubescentibus (superne sericeis, subtus plus minusve glabris) distinguenda.

TYPE: U.S.A.: Arizona: Graham Co., along US highway 70, ca. 16 km northwest of Bylas, 11 Apr 1987, Schaack 2046 & Schaack (holotype ASC; isotypes to be distributed).

Intricately branched shrubs to 1.4 m tall, multistemmed or with a very short single trunk; bark of older stems dark gray, fissured and shredding; upper branches light gray and smooth; woody spurs light gray, round in cross section, branched or unbranched, in part composed of, and roughened by, lignified stipularpodia. Leaves helically alternate, in clusters on young growth or at the apex of woody spurs. Leaf blades borne on herbaceous-coriaceous ciliate-margined stipularpodia, green or brownish-green with age, perennial, herbaceous-coriaceous, linear-very narrowly spatulate, largest blade per woody spur 6-15 times as long as wide; upper

surface loosely arachnose and scabrescent when young, glabrate-glabrous in age, not punctate; lower surface lanate when young; margins entire, revolute to strongly so; apex minutely mucronate or obtuse. Flowers 1 per spur or spur branch, sessile or pedicellate; pedicels 1-7 (-13) mm long, normally eglandular, moderately villous-lanate; hypanthium narrowly funnelform, ca. twice as long as wide, normally eglandular, moderately villous-lanate, funnelform-broadly funnelform and soon deciduous in fruit; calyx 5-lobed, sepals ovate and obovate, 2.0-5.5 mm long, eglandular, moderately villous-lanate, not apiculate; petals normally 5, ochroleucous (white?) and occasionally red or pink-tinged, obovate-spatulate, largest petal (1.3-) 1.5-2.0 times as long as wide, glabrous or occasionally pubescent apically; stamens many, 2 (-3) series, inserted on the hypanthium; pistils sessile, distinct, 2-4 (-5) per flower. Achenes at maturity ca. 5-7 mm long, 2.8-3.3 mm wide, brown,  $\pm$  lanceolate, strongly striate with ca. 14-20 striae, sericeous above and  $\pm$  glabrous below; fruiting styles terminal, plumose, (17-) 20-50 (-55) mm long; fruiting stigmas 1-2 mm long or less.  $\square = 9$ . Anthesis late March-mid April. Plants restricted to late Tertiary calcareous, lacustrine deposits ca. 16-21 km northwest of Bylas, Graham County, Arizona.

ADDITIONAL SPECIMENS EXAMINED. U.S.A.: Arizona: Graham Co., US highway 70, ca. 16 km NW of Bylas, 9 Apr 1984, 11 Apr 1985, Anderson 84-11, 84-12, 85-5 (ASU); ca. 18 km NW of Bylas, 17 Mar 1982, Clark 1506 & Parfitt (ASU); milepost 284 NW of Bylas, 18 Sept 1976, McGill & Lehto 120683 (ASU); ca. 20 km NW of Bylas, 7 Sept 1968, Pinkava, Keil & Lehto 113397 (ASU); ca. 15.3 km NW of Bylas, 7 Apr 1969, Pinkava, Keil & Lehto 115583 (ASU); ca. 17.7 km NW of Bylas, 16 June 1974, Roberts & Keil 10126 (ASU); ca. 21 km NW of Bylas, 12 Apr 1986, Schaack 1742-1751 & Schaack (ASC); ca. 16 km NW of Bylas, 16 May 1987, Schaack 2066-2068 & Schaack (ASC); between milepost 283 & 282 NW of Bylas, 16 May 1987, Schaack 2069 & 2070 & Schaack (ASC).

This species is named in honor of Donald J. Pinkava, Professor of Botany at Arizona State University, student of Purshia, and the Arizona flora, in particular Cactaceae and Asteraceae. He was among those first to collect and report (Pinkava et. al., 1970) the Graham County material northwest of Bylas.

The linear-very narrowly spatulate, entire, strongly revolute leaf blades of P. pinkavae and P. ericifolia contrast strongly with, and readily distinguish these species from, the obovate (in outline) lobed, or toothed blades of other Purshia. The cylindrical woody spurs, helically alternate leaves with minutely mucronate-rounded apices, 2-4 (-5) achenes per flower, normally eglandular hypanthia, funnelform and soon deciduous fruiting hypanthia and eglandular non-apiculate sepals of P. pinkavae distinguish this species from P. ericifolia. Purshia ericifolia

has flattened and often twisted woody spurs, distichous alternate leaves with aristate tips, 8-17 achenes per flower, normally stipitate glandular hypanthia, campanulate-broadly campanulate persistent fruiting hypanthia and stipitate glandular apiculate (in bud and at anthesis) sepals. Specific relationships in *Purshia* (*P. pinkavae* and *P. ericifolia*) and the importance of hybridization as a speciation mechanism in *Purshia* will be topics for future investigations.

#### ACKNOWLEDGEMENTS

I thank Drs. David J. Keil, James Rominger and particularly Donald J. Pinkava for comments and criticisms on an earlier draft of this manuscript. Dr. David J. Keil kindly provided the Latin translation for the diagnosis of *P. pinkavae* and I gratefully acknowledge his assistance.

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